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## PATENT SPECIFICATION

584282



Application Date: Aug. 9, 1944. No. 15116/44.

Complete Specification Left: Aug. 1, 1945.

Complete Specification Accepted: Jan. 10, 1947.

## PROVISIONAL SPECIFICATION

## Improvements in and relating to Table and like Cutlery

I, GEORGE HERBERT FLETCHER, a British subject, of 8, Chorley Drive, Fulwood, in the City of Sheffield, 10, do hereby declare the nature of this invention to be as follows:—

This invention relates to table and like cutlery of steel or non ferrous material and has for its object the provision of a method of producing such articles which will facilitate and cheapen production whilst in no way reducing the quality of the finished article.

In the usual method of manufacture of such articles which necessitates a considerable number of processes, the blade or the like, bolster and tang are forged from one piece of metal approximately equal in thickness to the bolster which is first of all pressed or forged from metal, the blade then being swaged to the approximate thickness and roughly shaped and the tang being hammered to its final dimensions.

According to the present invention a method of producing table or like cutlery comprises the steps of forming the bolster, blade and tang, individually from separate pieces of metal or forming the bolster and tang in one piece and the blade separately, uniting the finished or partly finished parts together by the fusion of metal and completing the article by the usual processes of grinding and polishing and applying the handle.

The invention also comprises an article of table and like cutlery in which the bolster, blade and tang are individually formed from separate pieces of metal or the bolster and tang formed from one piece and the blade from another and then united in the finished or partly finished state, by the fusion of metal, the article then being completed by the usual processes of grinding and polishing and by the affixing of a handle to the tang.

In carrying out the invention, as applied to a table or like knife comprising blade, bolster, tang and handle, the blade, bolster and tang are formed individually from separate pieces of metal which may be of the same or different material or composition. Thus the blade may be made of a steel which will provide

the best cutting edge whilst the bolster may be of a metal not having the same hardening qualities and the tang may be of ordinary carbon steel.

Alternatively the bolster and tang may be formed in one from one piece of metal and the blade from another. The blade is preferably formed from sheet or strip material having a tapered cross-section and for convenience in rolling the strip may be approximately double the width of a finished blade, a shallow V-groove being formed longitudinally down the centre of the strip on one or both sides so that two parallel blade blanks can be stamped from the strip. If a wider sheet be provided a plurality of parallel shallow grooves may be formed therein to provide a greater number of blade blanks.

The bolster is forged or pressed as above described from a separate piece of metal and preferably includes a very short portion of blade to which the main part of the blade is welded.

The tang is formed from round or other cross-section bar, from which it is cut off in suitable lengths. Any suitable projections or depressions may be formed on the bar prior to or after cutting to length to provide keying means co-operating with the handle.

The blade bolster and tang blanks are then electrically welded together, preferably by the process known as flash butt welding. Thus in the case of welding the bolster to the blade the bolster is connected to one terminal of the supply generator, transformer or battery and the blade connected to the other terminal. The blade and bolster are then brought into abutment along the edges to be welded together under some mechanical pressure. The contact resistance causes the metal at the point of contact to melt and under pressure the two parts (bolster and blade) are forced together, when the current is automatically interrupted resulting in a complete fusion of metal of the blade and bolster.

The tang is similarly welded to the other side of the bolster.

Alternatively, the blade, bolster and tang may be welded in one operation,

either by connecting the two junctions, i.e. the blade bolster and tang in series, or connecting an intermediate tapping of a transformer to the bolster, the two outer terminals of the transformer being connected to the tang and blade respectively, ensuring the independence of the two circuits.

It will be appreciated that the process above described may be applied equally well to non-ferrous materials, although in non-ferrous alloys it may be found prefer-

able to adopt the process known as electric brazing in which case a strip of brazing material is inserted between the parts to be brazed together, this brazing material being melted by the resistance offered to the passage of current and thus brazing the parts together.

Dated this 4th day of August, 1944.

R. F. DRURY & SONS,  
Agents for Applicant,  
24, Norfolk Row, Sheffield, 1.

## COMPLETE SPECIFICATION

### Improvements in and relating to Table and like Cutlery

I, GEORGE HERBERT FLETCHER, a British subject, of 8, Chorley Drive, Fulwood, in the City of Sheffield, 10, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to table and like cutlery of steel or non ferrous material and has for its object the provision of a method of producing such articles which will facilitate and cheapen production whilst in no way reducing the quality of the finished article.

In the usual method of manufacture of such articles which necessitates a considerable number of processes, the blade or the like, bolster and tang are forged from one piece of metal approximately equal in thickness to the bolster which is first of all pressed or forged from the metal the blade then being swaged to the approximate thickness and roughly shaped and the tang being hammered to its final dimensions. It has, however, been proposed to produce cutlery by welding together a separately formed blade, bolster and tang, or an integral blade and tang to a separate bolster.

According to the present invention a method of producing table or like cutlery comprises the steps of forming the bolster, blade and tang, individually from separate pieces of metal or forming the bolster and tang in one piece and the blade separately, the blade being formed from strip or sheet material in such a way that the blade blank is tapered transversely and if desired longitudinally, uniting the finished or partly finished parts together by the fusion of metal and completing the article by the usual processes of grinding and polishing and applying the handle.

The invention also comprises an article of table and like cutlery in which the

bolster, blade and tang are individually formed from separate pieces of metal or the bolster and tang formed from one piece and the blade from another, the blade being formed from strip or sheet material in such a way that the blade blank is tapered transversely and if desired longitudinally, and then united in the finished or partly finished state, by the fusion of metal, the article then being completed by the usual processes of grinding and polishing and by the affixing of a handle to the tang.

In carrying out the invention, as applied to a table or like knife comprising blade, bolster, tang and handle, the blade, bolster and tang are formed individually from separate pieces of metal which may be of the same or different material or composition. Thus the blade may be made of a steel which will provide the best cutting edge whilst the bolster may be of a metal not having the same hardening qualities and the tang may be of ordinary carbon steel.

Alternatively the bolster and tang may be formed in one from one piece of metal and the blade from another. The blade is formed from sheet or strip material having a tapered cross-section and for convenience in rolling the strip may be approximately double the width of a finished blade, a shallow V-groove being formed longitudinally down the centre of the strip on one or both sides so that two parallel blade blanks can be stamped from the strip. If a wider sheet be provided a plurality of parallel shallow grooves may be formed therein to provide a greater number of blade blanks. If desired the blades may be cut diagonally from the tapered strip or sheet in such a way that the metal forming the blade would be tapered from end to end and also from back to front, that is both longitudinally and transversely.

The bolster is forged or pressed as above

described from a separate piece of metal and preferably includes a very short portion of blade to which the main part of the blade is welded.

5 The tang is formed from round or other cross-section bar, from which it is cut off in suitable lengths. Any suitable projections or depressions may be formed on the bar prior to or after cutting to length to provide keying means co-operating with the handle.

The blade bolster and tang blanks are then electrically welded together, preferably by the process known as flash butt welding. Thus in the case of welding the bolster to the blade the bolster is connected to one terminal of the supply generator, transformer or battery and the blade connected to the other terminal.

15 The blade and bolster are then brought into abutment along the edges to be welded together under some mechanical pressure. The contact resistance causes the metal at the point of contact to melt and under pressure the two parts (bolster and blade) are forced together, when the current is automatically interrupted resulting in a complete fusion of metal of the blade and bolster.

20 The tang is similarly welded to the other side of the bolster.

Alternatively, the blade, bolster and tang may be welded in one operation, either by connecting the two junctions, i.e. the blade bolster and tang in series, or connecting an intermediate tapping of a transformer to the bolster, the two outer terminals of the transformer being connected to the tang and blade respectively, ensuring the independence of the two circuits.

It will be appreciated that the process above described may be applied equally well to non-ferrous materials, although in non-ferrous alloys it may be found preferable to adopt the process known as electric brazing in which case a strip of brazing material is inserted between the parts to be brazed together, this brazing material being melted by the resistance offered to the passage of current and thus brazing the parts together.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A method of producing table or like cutlery comprising the steps of forming the bolster, blade and tang individually from separate pieces of metal

or forming the bolster and tang in one piece and the blade separately, the blade being formed from strip or sheet material in such a way that the blade blank is tapered transversely and if desired longitudinally, uniting the finished parts or partly finished parts together by the fusion of metal and completing the article by the usual processes of grinding and polishing and applying the handle.

2. A method of producing table or like cutlery according to Claim 1 in which the component parts of the article are each of different metals or alloys.

3. A method of producing table or like cutlery according to Claim 1 in which the component parts are welded together by electric resistance or flash butt welding.

4. A method of producing table or like cutlery according to Claim 1 in which the component parts are united together by electric brazing, brazing material being interposed between the parts for this purpose.

5. A method of producing table or like cutlery according to Claim 1 in which the blade is formed from sheet material having one or more shallow V-grooves formed therein from which a number of blade blanks each having a tapered cross section are cut or stamped.

6. A method of producing table or like cutlery according to Claim 5 in which the blanks are cut or stamped diagonally from the strip or sheet so as to produce a blank tapered both longitudinally and transversely.

7. An article of table or like cutlery in which the bolster, blade and tang are individually formed from separate pieces of material or the bolster and tang formed in one piece and the blade from another, the blade being formed from strip or sheet material in such a way that the blade blank is tapered transversely and if desired longitudinally and then united in the finished or partly finished state by the fusion of metal, the article then being completed by the usual processes of grinding and polishing and the affixing of a handle to the tang.

8. A method of producing table or like cutlery and the article produced thereby substantially as hereinbefore described.

Dated this 31st day of July, 1945.

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Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1947.

Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies, price 1s. 0d. each (inland) 1s. 1d. (abroad) may be obtained.

